

Application No.: 10/761,101
Request for Continued Examination
Reply to Final Office Action: June 1, 2007

Amendment entered in view of RCE.

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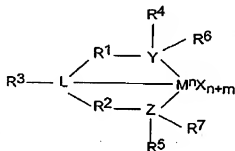
LISTING OF CLAIMS

/William Cheung/

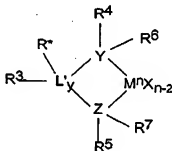
1. (Currently Amended) A process for polymerizing olefin(s) comprising, combining said olefin(s), a catalyst composition having a first catalyst [system] component comprising a Group 15 containing bidentate or tridentate ligated Group 3 to 7 metal compound wherein the Group 3 to 7 metal atom is bound to at least one leaving group and to at least two Group 15 atoms, and wherein at least one of the at least two Group 15 atoms is bound to a group 15 or 16 atom through a bridging group; and a second catalyst [system] component, wherein said second catalyst component is a metallocene compound and wherein said first catalyst component and said second catalyst component are added to a polymerization reactor and wherein the polymerization process is a continuous gas or slurry phase process.
2. (Cancelled)
3. (Currently Amended) The process of claim 1 wherein metal in the Group 15 containing metal compound is a Group 4 to 6 metal compound and wherein said first catalyst component and said second catalyst component are added to said polymerization reactor in one of a solution, suspension or an emulsion.
4. (Original) The process of claim 1 wherein the bridging group is selected from the group consisting of a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, and phosphorus.
5. (Original) The process of claim 1 wherein the Group 15 or 16 atom may also be bound to nothing, a hydrogen, a Group 14 atom containing group, a halogen, or a heteroatom containing group, and wherein each of the two Group 15 atoms are also bound to a cyclic group and may optionally be bound to hydrogen, a halogen, a heteroatom or a hydrocarbyl group, or a heteroatom containing group.

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6. (Currently Amended) The process of claim 1 wherein the Group 15 containing metal compound is represented by the formula:



or



wherein

M is a Group 3 to 2 [14] metal,

each X is independently a leaving group

y is 0 or 1,

n is the oxidation state of M,

m is the formal charge of the Y, Z and L or of Y, Z and L',

L is a Group 15 or 16 element,

L' is a Group 15 or 16 element or Group 14 containing group,

Y is a Group 15 element,

Z is a Group 15 element,

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R^1 and R^2 are independently a C_1 to C_{20} hydrocarbon group, a heteroatom containing group having up to twenty carbon atoms, silicon, germanium, tin, lead, or phosphorus,

R^3 is absent or a hydrocarbon group, hydrogen, a halogen, a heteroatom containing group,

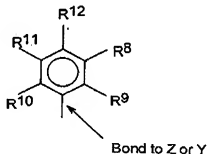
R^4 and R^5 are independently an alkyl group, an aryl group, substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic [aralkyl] aralkyl group, a substituted cyclic [aralkyl] aralkyl group or multiple ring system,

R^1 and R^2 may be interconnected to each other, and/or R^4 and R^5 may be interconnected to each other,

R^6 and R^7 are independently absent, or hydrogen, an alkyl group, halogen, heteroatom or a hydrocarbonyl group, and

R^* is absent, or is hydrogen, a Group 14 atom containing group, a halogen, a heteroatom containing group.

7. (Original) The process of claim 6 wherein R^4 and R^5 are represented by the formula



wherein

R^8 to R^{12} are each independently hydrogen, a C_1 to C_{40} alkyl group, a halide, a heteroatom, a heteroatom containing group containing up to 40 carbon atoms, wherein any two R groups may form a cyclic group and/or a heterocyclic group, and wherein the cyclic groups may be aromatic.

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8. (Currently Amended) The process of claim 7 wherein $[R^9, R^{10}, \text{ and } R^{12}] R^8 \text{ to } R^{12}$ are independently a methyl, ethyl, propyl or butyl group.
9. (Currently Amended) The process of claim 8 wherein $[R^9, R^{10}, \text{ and } R^{12}] R^8 \text{ to } R^{12}$ are methyl groups[, and R^8 and R^{11} are hydrogen].
10. (Original) The process of claim 9 wherein M is a Group 4 metal, L, Y, and Z are independently nitrogen, R^1 and R^2 are a hydrocarbon radical, R^3 is hydrogen, and R^6 and R^7 are absent.
11. (Original) The process of claim 9 wherein M is a Group 4 metal, L and Z are nitrogen, L' is a hydrocarbyl radical, and R^6 and R^7 are absent.
12. (Currently Amended) The process of claim [2] 1 wherein the second catalyst [system] component comprises a [bulky ligand] metallocene compound of the general formula $[L^D M Q_2(YZ)X_n]$



wherein M is a Group [3 to 16 metal] 4, 5 or 6 metal atom,

$[L^D]$ is a bulky ligand that is bonded to M,

L^A and L^B are selected from the group consisting of cyclopentadienyl, tetrahydroindenyl, indenyl, fluorenyl, and substituted versions thereof. L^A and L^B are each bonded to M;

each Q is a [univalent anionic ligand bonded to M] monoanionic leaving group,

$[Q_2(YZ)]$ forms a unicharged polydentate ligand;

$[n]$ is 1 or 2]

A is a divalent bridging group containing at least one Group 13 to Group 16 atom; and

n is 0, 1 or 2.

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- 13.-14. (Cancelled)
15. (Currently Amended) The process of claim 12 wherein M is a Group 4 metal [and L^D is an indenyl group or a fluorenyl group].
16. (Cancelled)
17. (Currently Amended) The process of claim 1 wherein the catalyst [systems comprise] composition further comprises an activator.
18. (Cancelled)
19. (Original) The process of claim 1 wherein the olefin(s) are ethylene and one or more other olefin(s).
20. (Currently Amended) The process of claim [2 wherein the Group 15 containing bidentate or tridentate ligated Group 3 to 7 metal compound and the bulky ligand metallocene compound] 1 wherein said first catalyst component and said second catalyst component are present in a molar ratio of 1:99 to 99:1.
21. (Currently Amended) The process of claim [2 wherein the Group 15 containing bidentate or tridentate ligated Group 3 to 7 metal compound and the bulky ligand metallocene compound] 1 wherein said first catalyst component and said second catalyst component are present in a molar ratio of 20:80 to 80:20.
- 22.-48. (Cancelled)